What is wrong about Pereleman-Toulmin's opposition between Legal Reasoning and Logic?

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Résumé

Around the 1960's, C. Perelman / L. Olbrechts–Tyteca and S. Toulmin endorsed the separation between argumentation and logic. In fact, both assumed a gap between every-day reasoning, closer to legal reasoning, and scientific reasoning based on mathematics. The main claim was that both paradigms are incommensurable, since the legal paradigm makes use of the notion of *formality*, that has a procedural nature with roots on a conversational and dialectical practice, and logic is based on the notion of *form*, that involves static (and syntactic) features. I will contest the incommensurability of both paradigms, as J. van Benthem (2009) did already, and plea that what we need is more rather than less logic. There are no juridical solutions to logical problems, if the problem is related to reasoning, then the solution relates to inferences drawn on the basis of juridical knowledge.

Dans les années 1960, C. Perelman/L. Olbrechts-Tyteca et S. E. Toulmin affirmèrent la séparation entre l'argumentation et la logique. En fait, les deux reconnaissent l'écart entre le raisonnement de tous les jours, plus proche du raisonnement juridique, et le raisonnement scientifique basé sur les mathématiques[3]. La revendication majeure était que les deux paradigmes sont incommensurables, du simple fait que le paradigme juridique fait usage de la notion de *formalité*, qui revêt une nature procédurale enracinée dans une pratique conversationnelle et dialectique pendant que la logique est basée sur la notion de *forme*, qui implique des caractéristiques statiques (et syntaxiques). Je vais –pour ma part– contester l'incommensurabilité des deux paradigmes, de même quel'avait déjà fait J. van Benthem (2009), et soutenir

[1] Based on a talk at the JURILOG meeting, May 19-20 2014, Lille.

que ce dont nous avons besoin c'est davantage de logique. Il n'y a pas de solutions juridiques aux problèmes logiques, si le problème est relatif au raisonnement, alors la solution se rapporte aux conclusions relevant des connaissances juridiques.

Since the times of the ancient Greece – where the agora emerged as the first public space for discussion and decision-making on diverse and serious matters - dialectical reasoning won a place in our understanding of science and constitution of a society which it has kept ever since. From those days, legal reasoning – with its dialectical features - seemed to provide the paradigm of reasoning in general. This paradigm was substituted by mathematical reasoning between the 19th and the 20th century, which lead to the axiomatization of logic developed by the work of Gottlob Frege. The rapid success of the axiomatic methods and the anti-psychologism underlying Frege's conception lead to the separation of rhetoric and logic, and with this separation the dynamics aspects of reasoning were lost. Indeed, the conception of reasoning as constituted within social epistemic interaction did not seem to fit the new notion of logic that followed the powerful work of Frege where logical consequence structures the deductive relation between propositions rather than that of judgements.

Curiously, around the 1960's, C. Perelman / L. Olbrechts–Tyteca (1958) and S. Toulmin (1958) accepted the separation between argumentation and logic, though defended that argumentation (Perelman pleads for a *new Rhetoric*) is a field of its own. In fact, both assumed a gap between every-day reasoning, closer to legal reasoning, and scientific reasoning based on mathematics. The main claim was that both paradigms are incommensurable, since the legal paradigm makes use of the notion of *formality*, that has a procedural nature with roots on a conversational and dialectical practice, and logic is based on the notion of *form*, that involves static (and syntactic) features. The upshot was: argumentation and mathematical logic provide essentially different forms of reasoning.

In relation to the difference between legal reasoning and logic one might count as one its endorsers Hans Kelsen who based his reflection on the distinction between the normative and the logical realm.

I will contest the incommensurability of both paradigms, as J. van Benthem (2009) did already, and plea that what we need is more rather than less logic. Juridical inferences are inferences in the same way as those of Physics or Mathematics are: they are valid or not valid, or, less generally; they lead from the knowledge of the truth of its premises to the truth of its conclusions. There are no juridical solutions to logical problems, if the problem is related to reasoning, then the solution relates to inferences drawn on the basis of juridical knowledge. Otherwise, the problem was not about reasoning for the start. Similarly, conceptual knowledge is normative in nature: its content relates to commitments and entitlements in a game of giving and asking for reasons - and that is what inferential knowledge is about. As I will suggest below, a more promising venue to the notion of juridical solution is to understand it as linking the logical analysis with its consequences for a juridical practice (or decision taking) congenial to this analysis. The latter might partially agree albeit in a different form with Perelman's (ethical) take on the link between argumentation and decision-taking.

So my answer is to the question of the title is: **everything about the opposition is wrong!** The very conception of the opposition is mistaken and this comes from the lack of understanding on what was going in logic since the 1960's. It is significant that the period when Perelman and Toulmin wrote their manifestos against logic, represents at the same time the period that can be signaled as the birth of the dynamic or dialogical turn in logic.[1] A turn that, in fact, provides the procedural means they were looking for.[2]

[1] The main original papers are collected in Lorenzen/Lorenz (1978). For an historical overview of the transition from operative logic to dialogical logic see Lorenz (2001). For a presentation about the initial role of the framework as a foundation for intuitionistic logic, see Felscher (1994). Other papers have been collected more recently in Lorenz (2010a, b).

[2] In fact, the *dialogical turn* that re-established the link between dialectical reasoning and inference interaction provides the basis of a host of current and ongoing works in the history and philosophy of logic, going from the Indian, the Chinese, the Greek, the Arabic, the Hebraic traditions, the Obligationes of the Middle Ages to the most contemporary developments in the study of epistemic interactionA detailed account of recent developments since, say, Rahman (1993), can be found in Rahman/Keiff (2005) and Keiff (2009). For the underlying metalogic see Clerbout (2013a,b). For a textbook presentation: Redmond/Fontaine (2011) and Rückert (2011a). For the key role of dialogic in regaining the link between dialectics and

Fortunately, Toulmin (1958, 1976, 2001) at least, recognized that there are some patterns of reasoning, though he defended that they are different from the standard inferences (see appendix I). But here again, as pointed out by van Benthem (2009), Toulmin missed a crucial point, namely it looks as if Toulmin did not know about the structure of hypothetical-deductive reasoning proposed by Carl Hempel and Paul Oppenheim in 1948 that had exactly the same structure as the one brought forward by Toulmin. So, sadly, Perelman and Toulmin's arguments against logic were born from both, their dissatisfaction with the logic we nowadays call classical first order logic (FOL) and their unawareness of the developments in logic of their time.

But why is that important now? Well there are still positions that defend that there is something like a legal reasoning that is fundamentally different from logic – or that nothing beyond some very basic notion of logic is needed. Moreover, those who endorse this upshot of the Pereleman-Toulmin position are still nowadays unaware of the new developments in logic and argumentation theory happening at a breath-taking pace in computer-sciences, artificial intelligence, philosophy, foundations of mathematics and linguistics.

I concede that if with the insufficiencies of logic, the standard first order baby logic is meant, this is correct – though , I am afraid; there are some that seems to think that even FOL is too sophisticated and that an elementary knowledge of traditional syllogism is enough. But, again nowadays there are much more sophisticated forms of logic. Is there one particular pattern or sets of patterns of reasoning that corresponds to juridical reasoning? If there is, then it must be possible to transcribe them into some kind of formal system, or algorithm that provides the means to distinguish valid, sound, invalid and unsound ones inferences. Perhaps, this might even produce an enrichment of the logical frame.

Certainly there are some important issues that Perelman and Toulmin raised and that should be discussed, such as the need for a reasoning based on

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logic, see Rahman/Keff (2010). Keiff (2004a,b) and Rahman (2009) study Modal Dialogical Logic. Fiutek et al. (2010) study the dialogical approach to belief revision. Clerbout/Gorisse/Rahman (2011) studied Jain Logic in the dialogical framework. Popek (2012) develops a dialogical reconstruction of medieval *obligationes*. For other books see Redmond (2010) – on fiction and dialogic – Fontaine (2013) – on intentionality, fiction and dialogues – and Magnier (2013) – on dynamic epistemic logic van Ditmarsch et al. (2007) and legal reasoning in a dialogical framework.

content: field knowledge rather than validity. I am also prepared to accept that one might need to distinguish different properties of inferences (should non monotonic reasoning be included or not?)? However, to make use of W. Sellars terminology the game of giving and asking for reasons is what conceptual reasoning is about, and this boils down to inference. Notice that to say that there is a system of reasoning that is parallel to the one on logic but different to it is nowadays quite tough to defend: what logic are we talking about? Is the claim that in principle there is no possible formal approach? -the latter is defended by the current school of Rhetoric at Brussels (see e.g. Danblon 2009, 2010, 2013; Meyer 1994, Meyer/Frydman 2012). Or is the point that for practical purposes we do not need a sophisticated formal system?

I am not claiming that in the legal practice we need to check every piece of knowledge with a sophisticated logical system. However, in particular difficult cases, we need to do a fine analysis of the deductive steps involved in complex reasoning and this amounts to a logical analysis In the same way that usually we do not need to make use of a sophisticated mathematical system to carry out elementary arithmetic operations. However; sometimes, perhaps, we will need of a higher level mathematical method of calculation. In general, once more, we need much more rather than less logic

One of the results of the ongoing Franco-German research project JURILOG[1] is that the case of conditional law requires a finer analysis as the one usually assumed and this is the lesson Leibniz provides to Roman Law – in fact, as discussed in appendix II, Magnier's recent formulation of conditional right in the frame of a dialogical dynamic epistemic logic satifies Toulmin's structure and provides a logical analysis of conditional right

For the sake of the argument I will bring forward Leibniz's so'called juridical solution to Protagoras-Euathlos dilemma, where according to a contract established and agreed by both parts (the dilemma, mostly – but not always-, assumes that the contract is a legally valid one) , Eauthlos agrees to pay the fees of the teachings to his teacher Protagoras, under the condition that the payment is due once Euathlos wins a trial. Protagoras goes to the courts before any trial involving Euathlos took place and claims that the fees

[1] An ANR-DFG-project between the University of Lille and the University of Konstanz (Germany), leaded by Shahid Rahman (Lille) – Logic and Epistemology - and Matthias Armgardt (Konstanz) - Civil Law and History of Law.

are due independently of the outcome of the trial. Either the court agreed with him and the fees are to be payed or the court decided against – in the latter case Euathlos won and thus the fees are due. Euathlos argues dually and concludes that the payment is not due: If the court decided that Euathlos won the court-case he must not pay, if the court decided against Euathlos then he lost and thus Euathlos must not pay. I picked up this example, since the history of the dilemma (see Jankowski 2014), profusely discussed in the context of Law precisely shows that usual juridical practices are not enough. Indeed, from the time of ancient Greece until 1960's, several attempts were carried out, including experts in Law, most of them unsuccessfully. Some even proposed as a solution to delay the decision indefinitely. It is apparent that no solution juridical, logical, pharmaceutical or otherwise, has been accepted by the majority, though, those lawyers, seem to have a solid expertise in the theory and practice of Law and, though I guess, it is fair to assume that they possess(ed) standard common sense in general and juridical in particular.

In fact on my view Leibniz, who also assumes that the contract is a legally valid one, makes a clever logical interpretation of the quite general principle *plus petitio*. This principle, formulated in its generality – asking for *too much* - in fact only states what is to be proven: one has to prove that Protagoras asks too much. What we have to do, that is the sense of the exercise, is to advance reasons backing the claim that Protagoras asks for too much. Leibniz's proposal is, in a nutshell, the following: the reason why Protagoras asks too much is that it is too early. Since it is too early, the condition is not fulfilled at the time of the trial at stake. However, after the decision against Protagoras has been established, the condition has now been fulfilled and Protagoras can start a new trial and gather his fees. Thus, the point of Leibniz is to provide the condition with a temporal index. Therefore, since the temporal index of the fulfilled condition is different to the one before that fulfilment no contradiction follows. However, Leibniz does not restrict ~~to~~ himself to furnish the ways to avoid the contradiction, he also would like to show how to implement this analysis in the juridical practice. More generally what he does is to link the argumentative analysis with its consequences for decision-taking. This is what the second trial is about. The upshot is another interpretation of what *juridical solution* means: juridical solution is about linking the logical analysis with an action (or chain of them) in order to achieve a decision-taking procedure. This Leibnizian approach might be contrasted with the one of E. Northrop (1944, re-ed. 1961), who in his book *Riddles in Mathematics*, concludes – as Leibniz did before – that there is no contradiction in our case-study. Northrop's analysis

is a bit more general, the point that a contradiction only follows if we do not distinguish between the different types of fulfilment of the condition. If we link this with Leibniz's analysis one can present as saying that the different temporal indexes are a particular way to make manifest in the context at stake that the types are different. So what is unsatisfactory with Northrops's analysis is not the logical one, that at the end can be his analysis can be reconstructed as a generalization of Leibniz's one, but that he did not manage – or was not interested – in the practical juridical consequences of it. Dually, according to Brewer (2011) Leibniz's solution is not logical and does only focus on the practical outcome. Brewer's analysis is wrong, the point of Leibniz is to offere a logical analysis that allows a decision-taking: what we need to understand Leibniz's suggestion is to undertake a more complex analysis one that includes temporality (see our discussion below).

Now, giving reasons is inference after all. Moreover, there might even be room to argue that the lack of a thorough logical analysis lead to disregard the fundamental conceptual difference between condition and presupposition – difference that might provide another version of Leibniz's solution. Once more, Lebniz provides the logical elements of how to build a test for such particular kind of reasoning, but until we built the system in all of its relevant details we have not very much more than a guess and we must make use then of our juridical and/or common sense feelings to decide if say the solution of Leibniz is better than the one of Schneider. Moreover, until the system that underlies Leibniz's solution has not been built the soundness of the juridical practice congenial to this analysis is not assured. Perhaps, here is some room for an opponent to my position who would ask how to decide which solution is the best one? This might be a sticky point but this is also applies to the non-logic position and even worse. At least, if the logical analysis has been properly developed we will be able to identify the exact point of disagreement. Another objection might be the following, but what about the logical solutions? Why did logicians not come to this solution earlier? Well, the solution we are thinking of had to wait for the development of new logics such as temporal and deontic and more crucially the development of a logic that deals with contentual inferences rather than with purely syntactic derivations and that is able to display this in a context of interaction. Coming back to our case-study, what Leibniz did, I claim, is to indicate what are, according to his view, the crucial logical steps (based on juridical knowledge) towards an accurate analysis of the dilemma. The point is now to thoroughly develop a system according to this proposed

analysis and check if it works or not. If it does, a congenial juridical practice will follow. The solution of W. Lenzen (1977) is close to accomplish the task, however it's semantics that combines deontic operators with temporal logic and his formulation of conditional right is too sketchy to really know if it works.

Moreover, I think that one of the positive lessons of the Perelman-Toulmin approach is that a legally efficient system for legal reasoning should be of procedural that is one where meaning is constituted by interaction at the object language level – see appendix III. As defended in other papers I think that a dialogical approach to P. Martin-Löfs *Constructive Type Theory* will do the job. In this context I will also mention without going into the details R. Brandom's arguments on inferentialism as a base to link normativity and logic, however; I will not discuss the Kelsenian's arguments in detail. I will leave my discussion of Kelsen for a next time, but I have the suspicion that also he was not aware of what was going on in the logic of his time.

My talk is rather a position paper and has the purpose to invite to a discussion on what is legal reasoning after all.

Appendix 1:

Toulmin's (1958) Analysis of the Structure of Arguments

Logical Inference:

PREMISES ==========➔ CONCLUSION

Different to

Argument: justification of a claim

DATA==========➔ CLAIM

⇳ ⇳

Reasons Qualification

Backing of Reasons Rebuttal

Reasons link data and claims. But the reasons need backing

Claims are mostly qualified: *Certainly*, *most probably*, *probably* etc. But qualifications can be defeated and changed.

Appendix II: Magnier's Analysis of Conditional Right

Sébastien Magnier (2013) provides a remarkable analysis of the notion of conditional right[1], which he generalizes for the logical study of legal norms. Magnier's main idea, motivated by the earlier and exhaustive textual and systematic work of Matthias Armgardt (2001, 2008, 2010)[2] and the subsequent studies carried out by Alexandre Thiercelin (2001, 2008, 2010) [3], involves Leibniz's notion of *certification,* which plays a central role in the famous *De conditionibus*. According to Magnier, the *certification* of the antecedent of a sentence expressing a conditional right – such as in *If a ship arrives, Primus must pay 100 dinar to Secundus* – is linked to an epistemic understanding of evidence. In our example, the *certification of the arrival of a ship* amounts to *there is public evidence for the arrival of a ship* and this amounts to *being in possession of the knowledge required to produce a piece of evidence for the arrival of a ship*. Moreover, inspired by Kelsen's conception of legal norms, Magnier generalizes his own approach in which he rejects a material-implication approach[4] and reconstructs conditional right and legal norms in the frame of a dialogical formulation of dynamic epistemic logic that includes sentences where a *public announcement operator* occurs. In other words, Magnier's contribution consists in a shift in perspective focussing on the semantics of truth-dependence underlying the meaning of conditional rights. The main idea is to identify the epistemic dynamics involved in the fulfilment of the condition as constituting the core of the meaning of dependence specific to the notion of conditional right. He implements this shift by means of a dynamic epistemic logic called *Public Announcement Logic* (PAL).

[1] In the present paper the term is used in the sense of Leibniz rather than in the sense in which it is generally understood in legal contexts nowadays.

[2] The work of Matthias Armgardt prompted and influenced a host of new research on the bearing of Leibniz's approach to current studies in legal rationality.

[3] In fact, Thiercelin's research was prompted by the work of Armgardt.

[4] In fact Magnier (2013, pp. 151-157, 261-292) rejects other forms of implication interpretations too, including strict implication or connexive implication.

The dialogical framework provides a further development of this dynamic by furnishing a dynamic theory of meaning. In a nutshell, the meaning of *If a ship arrives, Primus must pay 100 dinar to Secundus* boils down to establishing the conditions of a legal debate where *Secundus* claims the 100 dinar, given that the arrival of a ship has been *certified* (i.e., given that *it is known that a ship arrived*, or given that *there is evidence for the arrival of a ship*), rather than rendering this meaning by means of a model-theoretic semantics. More generally, the meaning of the notions of conditional right and legal norm is established by identifying the main logical features of those argumentative interactions that are deployed in legal trials. This leads Magnier to design specific logical language games (dialogues) that yield a theory of meaning rooted in legal practice itself.

Interesting is that this can be said to satisfy Toulmin's structure: Indeed:

> *Qualified Claim*: Primus must pay 100 coins to Secundus
>
> (*Deontic qualification*: must)
>
> *Data*: The arrival of a ship from Asia
>
> *Reasons*: The legal validity of a legal contract establishing that Primus must pay 100 coins to Secundus if a ship from Asia arrives

Moreover, this shows that we can link games of giving and asking for reason with entitlements and rights: Why must Primus pay? Because a ship arrived and there is a legally valid contract establishing establishing the relevant conditional right

Appendix III: Hypothetical Reasoning and Conditional Right

I certainly endorse Magnier's idea that (i) a theory of meaning involving legal reasoning should be based on an argumentative-based semantics, (ii) an epistemic approach to the notion of *legal evidence* should have a central role in a theory of legal reasoning, and (iii) implication is not really at stake in the logical analysis of conditional right. However, I think that the role of evidence should be given prominence and developed into a general epistemic theory of meaning where evidence is understood as an object that makes a proposition true. More precisely, I think that we should explore the possibility of placing the piece of evidence that grounds a proposition (the object that makes the proposition true) at the object-language level, instead

of via the formal semantics of an operator that introduces that evidence via the metalogical definitions of a formal (model-theoretical) semantics. That a proposition is true is supported by a piece of evidence, but this piece of evidence must be placed in the object language if that language is purported to have content. This move seems to be particularly important in the context of legal trials where acceptance or rejection of legal evidence is as much part of the debate as the main thesis itself. More generally, the notion of legal evidence should be linked to the meaning of a proposition and not only of an operator occurring within a proposition.

The underlying idea of my approach is to study the notion of conditional right by means of a constructive type theory (CTT) according to which propositions are sets, and proofs are elements. That a proposition is true means the set has at least one element. The analysis of legal norms should follow as a generalization, the details of which are not the subject of the present paper. In such a framework, the logical structure of sentences expressing conditional rights is analyzed as corresponding to that of hypotheticals rather than implications. The proof-objects that make the implications of the hypothetical true are *pieces of evidence dependent upon the evidence for the condition (*i.e. *dependent upon the evidence for the head of the hypothetical*). Herewith I follow Thiercelin's (2009, 2010) interpretation that considers the notion of dependence as the most salient logical characteristic of Leibniz's approach to conditional right. Moreover, in line with Armgardt (2001, pp. 220-25), I will study the general notion of dependence as triggered by hypotheticals and then the logical structure of dependence specific to conditional right. However, in my view, the dependence of the conditioned on the condition is defined with regard to the pieces of evidence that support the truth of the hypothetical rather than the propositions that constitute it. According to this analysis, the famous example for a conditional right:

If a ship arrives, then Primus must pay 100 dinars to Secundus

has the form of the hypothetical

Primus must pay 100 dinars to Secundus, provided there is some evidence x for the arrival of a ship

And this means

> The evidence *p* for a payment-obligation that instantiates the proposition *Primus must pay 100 dinar to Secundus* is dependent on some evidence *x* for a ship arrival

Furthermore, the *general logical structure* of the underlying notion of dependence yields:

> *p(x) : P (x : S)*

where *x* is a yet unknown element of the set of arrivals *S* (i.e. *x : S*), and where the evidence for a payment-obligation (the piece of writing that establishes the conditional right) is dependent on the arrival *x* of a ship, i.e., the evidence for payment-obligation is represented by the function *p(x).*

In this setting, when there is knowledge of some ship arrival *s*, the variable will be substituted by *s*.

Still, the logical structure *p(x) : P (x : S)* represents the more general case of dependence triggered by an underlying hypothetical form which is common to all right-entitlements that are dependent upon a proviso clause – such as the *requirements clause* of statutory right-entitlements or the *condition clause* of conditional right-entitlements. Moreover, a further deeper analysis requires an existential quantification embedded in a hypothetical of the sort:

If (∃w : S)Arrive(w) ***true****, then Pay (100 dinar, primus, Secundus)* ***true***[1]

Even this deeper analysis does not seem to fully capture the *future contingency* of the conditions upon which conditional rights are built. Nevertheless, this formalization *p(x) : P (x : S)* provides a general formal approach to the notion of dependence that, as pointed out by Armgardt (2001, pp. 221-25), seems to be in line with Leibniz's (A VI; I, pp. 235) own approach to the generalization of right-entitlements by means of hypotheticals.

As regards the specificity of conditional right, Leibniz himself defended, on one hand, a biconditional reading of the notion of dependence[2], and on the

[1] This was suggested by Göran Sundholm in a personal email.

[2] The biconditional reading relates to the link between the condition and the conditioned. Leibniz calls this feature of the conditional right *convertibility*. It is not clear if, in Leibniz's view, the biconditional reading only applies to conditional right.

other hand, the uncertainty regarding the fulfilment of the condition at the moment of the formulation of a (legally valid) concrete case of conditional right-entitlement.[1]

If we consider explicitly the underlying epistemic and temporal structure in the way that Granström (2011, pp. 167-170) tackles (in the CTT-frame) the issue on future contingents, a biconditional formalization specific to *Leibniz's notion of* condition-dependence is possible.[2] As a matter of fact, Aristotle's chapter of the *Peri Hermeneias* on the sea battle naturally leads to Leibniz's example of the ship. Roughly, the underlying idea is that both implications hold:

> *If a ship arrives then, Primus must pay 100 dinar to Secundus, (provided (S or not S) and assuming that the arrival of a ship proves the disjunction).*
>
> *If Primus must pay 100 dinar to Secundus, (provided (S or not S) and assuming that the arrival of a ship proves the disjunction), then a ship arrival is the case.*

Regarding the link between condition and conditioned, we can understand the whole structure as a conjunction of two implications embedded in one hypothetical. The implications are the following:

> *If the condition C is fulfilled then the beneficiary is entitled to the right at stake, assuming that some evidence for C solves the uncertainty (C or not C) underlying the conditional right.*
>
> *If the condition not C is fulfilled then the beneficiary is not entitled to the right at stake, assuming that some evidence for not C solves the uncertainty (C or not C) underlying the conditional right.*

Making use of the CTT-language we have the following formalization of Leibniz's example:

[1] This seems to be rooted in actual legal practice: If the condition *A* is not satisfied, the benefactor is not entitled to *B*. The actuality of this feature of the Leibnizian approach to the notion of conditional right has been defended by modern-day scholars of Law theory such as Koch / Rüßmann (1982, p. 47) and more thoroughly by Armgardt (2001, 2008, 2010).

[2] Cf. Rahman/ Granstöm, forthcoming.

Which reads:

> *If there is some evidence for a ship arrival, and this arrival solves the uncertainty (S or not S) underlying the conditional right, i.e., if the ship arrival provides evidence for the* ***left side*** *of the disjunction, then the beneficiary is entitled to the right at stake.*
>
> *If there is some evidence for no ship arrival and this solves the uncertainty (S or not S) underlying the conditional right, i.e., if the evidence for no ship arrival provides evidence for the* ***right side*** *of the disjunction, then the beneficiary is not entitled to the right at stake.*

In fact, this (hypothetical) conjunction of implications seems to be the most suitable formalization of the logical and epistemic structure underlying the notion of conditional right.

Furthermore, this is developed within a dialogical framework where the distinction between *play-object* and *strategy-object* (*or proof-object*) leads to the further distinction between two basic kinds of pieces of evidence such that strategy-evidence is made up of play-evidence.

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